

1. IDENTIFICATION

Product Name	Diacetone Alcohol
Other Names	4-hydroxy-4-methylpentan-2-one
Uses	Used in Coatings, Cleaning agents, Oil field drilling and production operations, Lubricants, Metal working fluids, Binder and release agent, Functional fluids, Laboratories, Polymer processing, and Water treatment chemicals. For industrial, professional and consumer use.
Chemical Family	No Data Available
Chemical Formula	C ₆ H ₁₂ O ₂
Chemical Name	2-Pentanone, 4-hydroxy-4-methyl-
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

SAFETY DATA SHEET DIACETONE ALCOHOL REVISION 2, DATE 21 OCT 19

Poisons Schedule (Aust)

Not Scheduled

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Flammable Liquids - Category 4
Serious Eye Damage/Irritation - Category 2A
Toxic To Reproduction - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3

Pictograms



Signal Word

Warning

Hazard Statements

H227 Combustible liquid.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H361d Suspected of damaging the unborn child.

Precautionary Statements

Prevention

P261 Avoid breathing fumes/mists/vapours/spray.
P233 Keep container tightly closed.
P271 Use only outdoors or in a well-ventilated area.
P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection and suitable respirator.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

P370 + P378 In case of fire: Use carbon dioxide (CO₂), dry chemical, alcohol resistant foam or water spray for extinction.
P337 + P313 If eye irritation persists: Get medical advice.
P312 Call a POISON CENTER or doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340 IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification

Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Diacetone alcohol	C6H12O2	123-42-2	>=99 - <=100 %
Non-hazardous ingredients/Ingredients present at non-hazardous concentrations	Unspecified	Unspecified	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth with water. Do not give anything to drink. Do not induce vomiting. Get immediate medical advice/attention.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Get immediate medical advice/attention.
Skin	IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes. Use a mild soap if available. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. *Place affected clothing in a sealed bag for subsequent decontamination.
Inhaled	IF INHALED: Remove victim to fresh air and keep warm and at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician for advice. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	If exposed or concerned, get medical advice/attention. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Treat symptomatically. There is no specific antidote available.
Medical Conditions Aggravated by Exposure	Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

5. FIRE FIGHTING MEASURES

General Measures	Move containers from fire area if you can do it without risk. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.
Flammability Conditions	Combustible liquid: may burn but does not ignite readily.
Extinguishing Media	Use foam, dry powder, Carbon dioxide (CO2) or water spray for extinction. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. *Unsuitable extinguishing media: High volume water jet.
Fire and Explosion Hazard	Vapour/air-mixtures are explosive at intense warming. Heating increases the inner pressure of the bottle, risk of explosion.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic gases, including Carbon oxides (CO + CO2).
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	61 - 64 °C [Closed cup]
Lower Explosion Limit	1.80 %
Upper Explosion Limit	6.90 %
Auto Ignition Temperature	643 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid breathing vapours and contact with eyes, skin and clothing. *Only qualified personnel equipped with suitable protective equipment may intervene.
Clean Up Procedures	Pick up with sand or other non-combustible absorbent material and place into containers for later disposal (see SECTION 13). *Non-sparking tools should be used.
Containment	Stop leak if you can do it without risk. Turn leaking containers leak-side up to prevent the escape of liquid. Dike far ahead of large spill for later disposal. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Clean contaminated floors and objects thoroughly while observing environmental regulations. Recover the cleaning water for subsequent disposal.
Environmental Precautionary Measures	Try to prevent the material from entering drains or water courses. Local authorities should be advised if significant spillages cannot be contained.
Evacuation Criteria	Mark the contaminated area with signs and prevent access to unauthorised personnel. Evacuate personnel to safe areas.
Personal Precautionary Measures	Wear personal protective equipment (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Obtain special instructions before use - Do not handle until all safety precautions have been read and understood. Avoid breathing mist/vapours/aerosols and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). Combustible liquid: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Ground/bond container and receiving equipment. Take measures to prevent the build up of electrostatic charge.
Storage	Store in a cool (< 43 °C), dry and well-ventilated place. Protect from frost, heat and sunlight. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from incompatible materials (see SECTION 10). Store locked up. To prevent leaks or spillages from spreading, provide a suitable liquid retention system. *Store contents under inert gas. Keep under nitrogen.
Container	Store in original container or suitable material (Stainless steel, Carbon steel). *Unsuitable material: Plastic container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Diacetone alcohol (CAS No. 123-42-2): <ul style="list-style-type: none"> - Safe Work Australia Exposure Standard: TWA = 50 ppm (238 mg/m3). - New Zealand Workplace Exposure Standard [Next review 2023]: TWA = 50 ppm (238 mg/m3). - NIOSH REL/OSHA PEL: TWA = 50 ppm (240 mg/m3). - Immediately dangerous to life or health (IDLH) concentration: 1,800 ppm
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Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	<ul style="list-style-type: none"> - Respiratory protection: Use a respirator with an approved filter if a risk assessment indicates this is necessary. Recommended: Organic vapour respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Tightly fitting safety goggles (refer to AS/NZS 1337.1). - Hand protection: Wear protective gloves. Recommended: Solvent-resistant gloves (refer to AS/NZS 2161.1). - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Choose body protection according to the amount and concentration of the hazardous substance(s) at the work place.
Special Hazards Precautions	Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards and/or risks that may occur during use.
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Use clean, well-maintained personal protection equipment. Remove and wash contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Pleasant
Colour	Colourless
pH	No Data Available
Vapour Pressure	1.29 hPa (@ 20 °C)
Relative Vapour Density	1.005 Air = 1
Boiling Point	167.9 °C (1,013 hPa)
Melting Point	No Data Available
Freezing Point	-44 °C
Solubility	Miscible with water, alcohols, ether - Miscible with common organic solvents
Specific Gravity	0.94
Flash Point	61 - 64 °C [Closed cup]
Auto Ignition Temp	643 °C
Evaporation Rate	0.12 (Butyl acetate = 1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	92 kg/dm ³
Specific Heat	No Data Available
Molecular Weight	116.16 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	log Pow: -0.09 (20 °C)
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	2.798 mPa.s (@ 25 °C)

Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Combustible liquid: may burn but does not ignite readily.
Reactions That Release Gases or Vapours	On combustion or thermal decomposition (pyrolysis), releases Carbon oxides (CO + CO ₂).
Release of Invisible Flammable Vapours and Gases	Vapour/air-mixtures are explosive at intense warming.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Prevent the build-up of electrostatic charge.
Materials to Avoid	Incompatible with strong oxidising agents, strong bases.
Hazardous Decomposition Products	On combustion or thermal decomposition (pyrolysis), releases Carbon oxides (CO + CO ₂).
Hazardous Polymerisation	Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: May be harmful if swallowed. Ingestion may cause gastrointestinal discomfort, dizziness, headache, diarrhoea. If swallowed, aspiration into the lungs may result in chemical pneumonitis. - Skin corrosion/irritation: Not classified as irritating to skin (Rabbit) [OECD Test Guideline 404]. May cause local irritation, redness, dry skin. - Eye damage/irritation: Causes serious eye irritation, reversible within 21 days (Rabbit) [OECD Test Guideline 405]. Causes serious eye irritation, redness, pain. - Respiratory/skin sensitisation: Does not cause skin sensitisation (Guinea pig Maximisation Test) [OECD Test Guideline 406]. - Germ cell mutagenicity: The product is not considered to be genotoxic (in vivo/in vitro). Tests on bacterial or mammalian cell cultures did not show mutagenic effects. - Carcinogenicity: The product is not considered to be carcinogenic. - Reproductive toxicity: The product is not considered to be toxic to reproduction/fertility/development. The product is not considered to be teratogenic. - STOT (single exposure): May cause respiratory irritation. Vapour during processing may be irritating to the respiratory tract and to the eyes. May cause respiratory irritation, cough, sore throat, dizziness, headache. - STOT (repeated exposure): Not considered to cause serious damage to health on repeated exposure. - Aspiration toxicity: No information available.
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Acute	
Ingestion	Acute toxicity (Oral: Gavage): - LD50, Rat (male & female): 3,002 mg/kg [OECD Test Guideline 401; Published data]. *Symptoms: Central nervous system depression.
Inhalation	Acute toxicity (Inhalation: vapour): - LC0, Rat (male & female): ≥ 7.6 mg/l (4 h) [OECD Test Guideline 403]. *No mortality observed at this concentration.
Other	Acute toxicity (Dermal): - LD0, Rat (male & female): $>1,875$ mg/kg [OECD Test Guideline 402]. *No mortality observed at this concentration.
Mutagenicity	Genotoxicity (in vitro): - Ames test (with/without metabolic activation): Negative [OECD Test Guideline 471]. - Reverse mutation assay (Escherichia coli, with/without metabolic activation): Negative [OECD Test Guideline 471]. - Gene mutation assay, Mammalian cells (Mouse lymphoma cells, with/without metabolic activation): Negative [OECD Test Guideline 476]. - Chromosome aberration test, in vitro (CHL, with/without metabolic activation): Negative [OECD Test Guideline 473].
Reproduction	Reproduction/developmental toxicity screening test (Oral, Rat): - Fertility NOAEL (Parent): 300 mg/kg - Early embryonic development NOAEL, F1: 300 mg/kg [OECD Test Guideline 422].
Chronic	
Ingestion	Repeated dose toxicity (Oral: Gavage): - NOAEL, Rat (male/female): 100 mg/kg bw/day (44 days) [OECD Test Guideline 422]. *Target organs: Kidneys (Effects on the kidney not relevant for humans).
Inhalation	Repeated dose toxicity (Inhalation): - NOAEC, Rat (male/female): 4,685 mg/m ³ (6 weeks) [OECD Test Guideline 412]. *Target organs: Kidneys (Effects on the kidney not relevant for humans).
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Acute toxicity to fish: - LC50, Oryzias latipes (Japanese medaka, semi-static test): >100 mg/l (96 h) [OECD Test Guideline 203]. Acute toxicity to daphnia/other aquatic invertebrates (Immobilisation): - EC50, Daphnia magna (Water flea, semi-static test): 1,000 mg/l (48 h) [OECD Test Guideline 202]. Toxicity to aquatic plants (Growth inhibition): - NOEC, Pseudokirchneriella subcapitata (Green algae, static test): 1,000 mg/l (72 h) - ErC10, Pseudokirchneriella subcapitata (Micro-algae, static test): >429 mg/l (72 h) - ErC50, Pseudokirchneriella subcapitata (Micro-algae, static test): $>1,000$ mg/l (72 h) [OECD Test Guideline 201]. Toxicity to microorganisms (Respiration inhibition): - EC50, Pseudomonas putida (static test): 825 mg/l (16 h). Chronic toxicity to daphnia/other aquatic invertebrates (Reproduction test): - NOEC, Daphnia magna (Water flea, semi-static test): 100 mg/l (21 d) [OECD Test Guideline 211].
Persistence/Degradability	Biodegradability: Readily biodegradable [OECD Test Guideline 301]. *O ₂ consumption: 98.5% (28 d) [OECD Test Guideline 301 A].
Mobility	Adsorption potential (Koc): Not expected to adsorb on soil.
Environmental Fate	The product should not be allowed to enter drains, watercourses or soil.
Bioaccumulation Potential	Bioconcentration factor (BCF): NOT potentially bioaccumulative (Structure-activity relationship (SAR)).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container to an approved incineration plant and in accordance with local regulations. Do not dispose
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of with domestic refuse. Send to a licensed waste management company.

Special Precautions for Land Fill Do not re-use empty containers. Empty remaining contents. Allow it to drain thoroughly. Rinse with an appropriate solvent.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Diacetone Alcohol
Class	C1 Combustible Liquids - Flash Point >60°C - <=93°C, Closed Cup
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Diacetone Alcohol
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Diacetone Alcohol
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Diacetone Alcohol
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Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	Diacetone Alcohol
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	Diacetone Alcohol
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001120

National/Regional Inventories

Australia (AIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	DIACAL1303, DIACAL1600, DIACAL1602, DIACAL1605, DIACAL1606
Revision	2
Revision Date	21 Oct 2019
Key/Legend	<p>< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health</p>

immiscible Liquids are insoluble in each other.

inHg Inch of Mercury

inH₂O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

lb Pound

LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or **L** Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight